

ABSTRACT

An efficient method for performing state based ingress packet selection for a packet processing system in a network processor is disclosed. With this method, each set of message classes is associated with a state of an application, and each set of message classes is assigned to a semaphore. The application blocks one of the semaphores based on its current state. When a message is received, and the message belongs to a class assigned to the blocked semaphore, the blocked semaphore is signaled. The blocked semaphore then wakes the application. In this manner, when the application is awakened, it is guaranteed to find a message that it is interested in processing in its current state, resulting in greater efficiency in the processing of ingress messages.